The Dow Chemical Company
Midland, Michigan 48674
USA

January 21, 2008

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REVISED PETITION FOR TREATABILITY VARIANCE FOR SOILS GENERATED FROM MAINTENANCE AND REPAIR OF REVETMENT GROUNDWATER INTERCEPTION SYSTEM (RGIS) AND CORRECTIVE ACTION MANAGEMENT SYSTEMS
EPA FACILITY ID NUMBER MID 000 724 724

On October 1, 2007, the Dow Chemical Company (Dow) submitted a petition for a new Treatability Variance for soils generated from maintenance and repair of Dow's RGIS and other corrective action management systems.

Based on feedback from the MDEQ-WHMD staff since the submittal of that document, it was agreed to that in order to best facilitate not only RGIS and other corrective action management system upgrade and maintenance activities, additional corrective actions required by Parts XI and XII of Dow's Operating License at and adjacent to the Michigan Operations facility should be added to the scope of the Variance.

Accordingly, Dow hereby submits this revised petition for a Treatability Variance reflecting the above-referenced additions, consistent with the provisions of 40 CFR 268.44(h)-(j).

If you should have any questions, please call Steve Lucas at 989-638-6012.

Brad Fedorchak
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meh
Enclosures

Background

During maintenance and upgrade activities of the Revetment Groundwater Intercept System (RGIS) and other corrective action projects, The Dow Chemical Company (Dow) generates some waste soils containing F039-listed hazardous waste (multi-source leachate),[1] making those soils hazardous through the US Environmental Protection Agency's (EPA's) "contained-in" policy. Some of these soils contain levels of F039 constituents and dioxin and furan congener groups that exceed their respective Land Disposal Restriction (LDR) treatment standards (the treatment standards for dioxins and furans currently range from 1.0 to 5.0 parts per billion (ppb); LDR treatment standards vary widely for the remaining F039 constituents listed in 40 CFR 268.40. In 1999, the EPA promulgated what are commonly referred to as the "Phase IV" LDR standards for contaminated soil, essentially amounting to 10 times the original LDR standards. Absent the availability of alternatives by which to manage F039 and dioxin/furan-contaminated soil, Dow would be required to temporarily store, manage and eventually incinerate hundreds of thousands of cubic yards of hazardous soil.

Since promulgation of the LDR treatment standards, the EPA has recognized and acknowledged that the standards were developed for "as generated" or "process" hazardous wastes, and were inappropriate for application to soil contaminated with those wastes. As a remedy, the EPA has provided for the issuance of treatability variances that allow for the use of alternate treatment levels for soils (40 CFR 268.44). Recognizing that literally hundreds of thousands of cubic yards of contaminated soil generated

[1] Other waste codes may also apply, but MDEQ historically has deemed F039 to be a representative waste code.

through RGIS upgrade and corrective action activities could be subject to the LDR treatment standards, Dow elected to petition for a treatability variance that would allow disposal in Dow's Salzburg Hazardous Waste Landfill as opposed to long-term management and incineration. That petition was submitted on January 4, 1996. After minor revisions dated February 20, 1996 and March 15, 1996, the EPA granted approval of the petition on June 10, 1997. Supporting documentation from the January 4, 1996 petition is included as an attachment to this submittal.

The EPA justified its June 10, 1997 approval of the petition by stating that granting the treatability variance would:

- Expedite the replacement of RGIS in order to maintain protection for the Tittabawassee River;
- Provide additional environmental protection by allowing greater flexibility in the choice of construction methodologies and materials, resulting in a more durable and effective RGIS;
- Eliminate the need for long-term storage of contaminated soils at Dow; and
- Eliminate the need to incinerate large quantities of contaminated soil.

The EPA further acknowledged in their approval notification that "Disposal of contaminated soil at Salzburg Landfill will be protective of human health and the environment". Accordingly, it is clear that the EPA recognized the valid utility of this site-specific treatability variance both in terms of facilitating environmental cleanup

activities and in protecting human health and the environment through disposing of RGIS soils at Salzburg.

Request

Because of Dow's desire to operate and maintain all of its corrective action monitoring and collection systems (including RGIS and other on- and off-site systems) in a proactive manner that will be protective of the public health, safety, welfare and the environment, Dow may wish to conduct maintenance and/or other upgrade activities on portions of RGIS and/or other corrective action management systems as deemed necessary or appropriate in order to maintain and effectively operate those systems, and to avoid more difficult replacement or repair activities carried out in response to sudden or unforeseen performance or integrity issues. Additionally, Parts XI and XII of Dow's Operating License requires the implementation of specific corrective actions at and adjacent to the Michigan Operations facility. These activities would be similar to those that have previously generated the soils subject to the original treatability variance, and to which previously-approved alternate treatment standards were applied. To facilitate Dow's continued proactive maintenance of its corrective action management systems in perpetuity and compliance with its operating license requirements , Dow proposes that a new, Michigan Department of Environmental Quality (MDEQ)-issued soil treatability variance be approved (with appropriate revision) for application to all hazardous soils generated from routine maintenance and proactive upgrade activities on all of Dow's corrective action management systems, and from corrective action projects conducted at and adjacent to the Michigan Operations facility where soil contaminated by F039

constituents, including dioxins and/or furans, will be generated. Dow proposes the following revisions be incorporated in the new variance:

1. The original RGIS soil treatability variance requires that a soil and groundwater sampling plan be approved for each phase of the project. Considering the numerous sampling and analysis plans that have been previously submitted in the past covering a wide array of projects, it would not be expected that any future soil or groundwater sampling would be conducted in a significantly different manner than that which has been previously done. Accordingly, Dow would like to eliminate this administrative redundancy and its accompanying burden both on Dow and on MDEQ.
2. A second condition requires that the disposition and volume of soils for each phase of RGIS replacement be approved by MDEQ prior to implementation. Dow believes that this requirement is an unnecessarily restrictive component of the variance process, is a burden on MDEQ, has the potential to negatively impact the timely completion of some of the proposed activities, and could be better addressed in other ways. Dow proposes an annual update of soil volumes managed under a new variance to address this informational requirement.
3. The original RGIS treatability variance requires that a work plan be submitted and approved prior to field implementation. Dow does not believe that this condition is necessary, as work plans for this type of project are already required by the operating license whether a

treatability variance exists or not. Dow proposes eliminating this redundancy in the new variance.

4. The original variance required Dow to manage non-hazardous soils as hazardous waste in Salzburg Landfill if the soils came from a RGIS project. Dow believes it would be appropriate to allow Dow to relocate non-hazardous soils on-site consistent with Part 201 requirements.
5. The original RGIS variance required that soils be placed in a discrete area of the landfill. Dow would like to define this discrete location in the new variance as the active landfill cell in operation at the time of soil disposal.

As part of this request, Dow also wishes to clarify in the new variance that all dioxin/furan congener groups are included. In the EPA's June 10, 1997 approval of the original variance, several parts reference "dioxin and furan contaminated soils" or "soils...that contain dioxin and furan concentrations above the treatment standard of 1 ppb". However, Table 1 on page 2 of the approval appears to indicate that the 1 part per billion (ppb) treatment standards for TCDD/TCDF are the only treatment standards for which the variance was sought. Dow's original petition identified the 1 ppb treatment standard as applicable to each total congener group of the tetrachloro-, pentachloro-, and hexachloro-dibenzodioxins and dibenzofurans. Dow would like the new variance to clearly indicate that the approved alternate treatment standard applies to these congener groups as well as TCDD/TCDF.

Additionally, at the time of the EPA's June 10, 1997 petition approval, there had been no LDR treatment standards promulgated for the heptachloro- and octachloro-dibenzodioxins and dibenzofurans. Because the EPA has since promulgated standards for these two congener groups, Dow believes they should be expressly addressed in the new treatability variance as part of granting the requested extension.

The final revision to the scope of this variance petition is the inclusion of all F039 constituents that are commonly encountered in soils throughout the Michigan Operations facility.

Accordingly, Dow proposes alternate treatment standards for soils/sediments with F039 constituent concentrations greater than LDR Phase IV universal treatment standards (10 times the universal UTSs specified in 40 CFR 268.40) but less than 5 times those standards. Dow further proposes an additional, alternative standard for soil having dioxin/furan contamination less than 50 parts per billion (ppb) total International Toxic Equivalent Quotient (I-TEQ). Dow believes that the application of either of these alternative LDR standards has previously been shown to be adequately protective of the public health, safety, welfare and the environment.

Basis for Request

As outlined in the January 4, 1996 petition, Dow relied on the guidance contained in Superfund LDR guides 6A and 6B entitled *Obtaining a Soil and Debris Treatability Variance for Remedial Actions* (EPA publication numbers 9347.3-O67S and

9347.3-OB67S). In that guidance, the EPA articulated the mechanism by which its longstanding policy that site-specific treatability variances to LDR standards were generally appropriate for contaminated soils could be practically implemented.

As referenced earlier in this document, it is Dow's intent to proactively manage its property-wide groundwater collections systems, most notably the RGIS system. An internal EPA memorandum dated January 8, 1997 indicates that one of the common cleanup scenarios which my prompt consideration of a site-specific treatability variance would be where site-specific considerations could result in a net environmental detriment through discouraging cleanup. As put forward in Dow's original petition and reiterated here, the necessity of having to store and manage hundreds of thousands of cubic yards of hazardous soils pending incineration in Dow's onsite facility would be a disincentive for Dow to voluntarily pursue the aggressive O&M strategy currently under consideration for its multiple corrective management systems, and would further impede the necessary corrective actions articulated in Parts XI and XII of Dow's Operating License.

If MDEQ grants a new variance (with the proposed revisions), Dow can proceed with the formal closure of another on-site solid waste management unit (Waste Storage Area IIA (WSA IIA)), proactively maintain Dow's corrective action management systems, and conducted necessary corrective actions in a manner best suited to protect the public health, safety, welfare and the environment. WSA IIA has historically been utilized as the long-term staging facility for RGIS soils exceeding LDR standards that are destined for incineration.

Authority

This treatability variance petition is being submitted under the provisions of 40 C.F.R. 268.44. It was indicated by the MDEQ at the August 28, 2007 meeting that this provision falls under the WHMD's delegated authority. As referenced earlier, Dow has included a copy of the original petition for the existing treatability variance. Dow believes that this information will fulfill the detailed information requirements of petitions outlined in 40 CFR 270.21, 270.62, 270.63, and Michigan Public Act 451 Part 111 Rules 504 and 508.

It was further indicated by the MDEQ at the August 28, 2007 meeting that the variance approval process would follow the public participation procedures applicable to major license modifications outlined in Part 111, Rule 511.

Timing of Request

The original treatability variance expired on June 10, 2007. Because Dow would like to continue with a seamless corrective action management O&M program, it is desired that this petition for a new treatability variance be granted as soon as is practicable after the necessary technical review and public participation requirements are completed.

FACT SHEET
DRAFT DECISION
PETITION FOR SITE-SPECIFIC TREATABILITY VARIANCE
FOR
THE DOW CHEMICAL COMPANY
MID 000 724 724

The Michigan Department of Environmental Quality – Waste and Hazardous Materials Division (MDEQ - WHMD) proposes to approve a Petition for a Site-Specific Treatability Variance for contaminated soils from Land Disposal Restrictions that was submitted by the Dow Chemical Company (hereinafter referred to as Dow) for its Michigan Operations facility located in Midland, Michigan (Midland Plant).

INTRODUCTION

Activities at Dow's 1,900 acre Midland Plant include manufacturing, research and development, and various administrative support functions related to the manufacture and sale of plastics, agricultural chemicals, and organic and inorganic chemicals. In addition, Dow manages much of the waste generated at the Midland Plant in onsite and nearby facilities that are permitted by the MDEQ - WHMD and the United States Environmental Protection Agency (U.S. EPA). As a result of historical waste management activities at the facility, portions of the soil and groundwater beneath the site have become contaminated. A Compliance Schedule has been incorporated into the License as Part XII for the implementation of the corrective actions identified in Part XI of Dow's Operating License (License) to address historical, onsite waste management issues. These corrective actions are expected to include but are not limited to hydrogeological investigations, soil and/or groundwater remediation, demolition, and remediation system operation and maintenance activities.

BACKGROUND

Since the Tittabawassee River flows through the Dow Midland Plant, contaminated groundwater could potentially reach the Tittabawassee River. To prevent this contaminated groundwater from entering the river, Dow has installed and operates approximately 13,600 feet of groundwater collection tile along the riverbanks. This groundwater collection tile system is referred to as the Revetment Groundwater Interception System (RGIS). Groundwater that is collected by the RGIS is sent to Dow's wastewater treatment plant for treatment prior to discharge to the Tittabawassee River.

To facilitate the ongoing operation and maintenance of the RGIS, Dow petitioned the U.S. EPA and was granted a Treatability Variance for soils generated from the maintenance and repair of the RGIS. That petition, granted on June 10, 1997, allowed Dow to dispose dioxin and furan-contaminated soils with concentrations exceeding their federal Universal Treatment Standards (UTSs) in Dow's Salzburg Landfill (SLF). SLF is a hazardous waste disposal facility permitted by the MDEQ – WHMD through the federal Resource Conservation and Recovery Act (RCRA).

In the future, additional segments of the RGIS will require replacement in addition to the corrective actions enumerated in Part XI of Dow's License. These projects will require the disposal of excavated soils. The total volume of excavated soils that will result from these projects is expected to be in the hundreds of thousands of cubic yards. Onsite soils (including those in the vicinity of the RGIS) have become contaminated over time by

historical land disposal activities and due to the movement of contaminated groundwater (F039 multi-source leachate) through the soil on its way to the interceptor trench. The contaminants within these soils include dioxins and furans as well other constituents. The primary source of the dioxin and furan contaminants in Midland Plant soils is thought to be from past waste disposal areas associated with 2,4,5-trichlorophenol (2,4,5-T) and pentachlorophenol herbicide and other related manufacturing/formulation plants that operated between the 1930s and 1970s. The dioxins and furans were inadvertent byproducts or impurities formed during the manufacture of the chlorinated phenolic products.

WASTE SUBJECT TO THIS VARIANCE

The June 10, 1997 Treatability Variance strictly addressed soils generated from RGIS maintenance activities. Wastes subject to the Site-Specific Treatability Variance Petition submitted by Dow to the MDEQ - WHMD on October 1, 2007 include soils generated from RGIS maintenance activities and other waste generated during corrective actions on or adjacent to the Midland Plant as outlined in Parts XI and XII of Dow's License. The activities covered under this Treatability Variance will generate remediation and/or demolition-type wastes requiring disposal.

AUTHORITIES AND REFERENCES

Under the federal Land Disposal Restriction (LDR) regulations, certain hazardous wastes are restricted from land disposal unless they meet a specified treatment standard designed to significantly reduce the toxicity of the hazardous waste. Pursuant to Title 40 of the Code of Federal Regulations, Part 268 (40 CFR 268), hazardous wastes that do not comply with the levels or methods of treatment which substantially diminish the toxicity of a waste or substantially reduce the likelihood that hazardous constituents will migrate from a waste are prohibited from being placed in land disposal units.

A generator of a waste may apply to the U.S. EPA Administrator for a variance from a treatment standard under the LDR regulations pursuant to 40 CFR 268.44(h)-(j). Section 268.44(h) states: "Where the treatment standard is expressed as a concentration in a waste or waste extract and a waste generated under conditions specific to only one site cannot be treated to the specified level, or where the treatment technology is not appropriate to the waste, the generator or treatment facility may apply to the Administrator, or his delegated representative, for a site-specific variance from a treatment standard. The applicant for a site-specific variance must demonstrate that because the physical or chemical properties of the waste differ significantly from the waste analyzed in developing the treatment standard, the waste cannot be treated to specified levels or by the specified methods."

The EPA published a Notice of Final Authorization for this provision (Amendment 7) on July 31, 2002 in 67 FR 49617, granting the MDEQ-WHMD the authority to administer Part 268.44 as part of its hazardous waste management program consistent with R 299.9627 of the Michigan Natural Resources and Environmental Protection Act (NREPA) (1994 P.A. 451, as amended) and as adopted by reference in R 299.11003. The review of Dow's application for a treatability variance by the MDEQ – WHMD was performed in accordance with this delegated authority.

This variance will apply to soils/sediments with constituent concentrations greater than LDR Phase IV universal treatment standards (10 times the universal UTSs specified in 40 CFR 268.40) but less than 5 times those

standards, and to soils having dioxin/furan contamination less than 50 parts per billion (ppb) total International Toxic Equivalent Quotient (I-TEQ). This concentration range is based upon alternate treatability variance levels contained in *Superfund LDR Guide #6A (2nd Edition); and Superfund LDR Guide #6B,* and can be summarized as a "5 times the applicable Phase IV UTSs for soils" rule. The specific treatment standards that the site-specific variance is being sought from are the F039 (multi-source leachate) treatment standards of 1 part per billion (ppb) for dioxins and furans and the variable standards for the remaining F039 constituents as listed in 40 CFR 268.40. These standards mean that waste must be treated to reduce dioxin and furan concentrations below 1 ppb, and remaining constituent concentrations below their respective UTSs listed in 40 CFR 268.40 prior to land disposal at a licensed hazardous waste facility. This treatment would normally be accomplished by incineration.

DESCRIPTION OF PETITIONER'S INTEREST IN THE PROPOSED ACTION

Soil sampling that has been performed to date indicates that some of the soils that will be excavated during the maintenance of the RGIS and during other onsite corrective actions are hazardous waste that contain dioxin and furan and/or other constituent concentrations above their respective treatment standards. Under the LDR regulations, these soils would likely require treatment prior to land disposal, and treatment would likely be accomplished by incineration. This would require the permitting and construction of a long-term storage facility for the soils prior to incineration, and would significantly delay the process of replacing the RGIS or undertaking other necessary corrective actions. Dow believes that the disposal of the contaminated soils in its hazardous waste landfill will provide environmental protection at least equivalent to treating the soils by incineration. In addition, the cost of incinerating hundreds of thousands of cubic yards of contaminated soil would detract from other efforts aimed at protecting the public health, safety, welfare and the environment. Thus, Dow is seeking this variance to expedite the maintenance of the RGIS, facilitate site wide corrective actions, avoid construction and operation of a storage facility for contaminated soils, allow for a more practical and beneficial use of available but limited resources, and dispose of the contaminated soils in a manner previously deemed protective of public health and the environment.

DESCRIPTION OF ALTERNATIVE PROPOSED IN THE PETITION

The alternative proposed in the petition for contaminated soils with contaminant concentrations greater than their LDR Phase IV UTS but less than 5 times the LDR Phase IV UTSs, or dioxin and furan contamination less than 50 ppb total I-TEQ, is direct landfilling in Dow's Salzburg Landfill. Salzburg Landfill is a hazardous waste landfill located near the Dow Midland Plant and licensed by the MDEQ under RCRA and Part 111 of the NREPA. Soils that contain dioxins and/or furans at concentrations greater than 50 ppb total I-TEQ and/or other F039 constituents with concentrations greater than 5 times their LDR Phase IV UTSs will be treated prior to disposal in a landfill.

JUSTIFICATION FOR APPROVAL

The MDEQ - WHMD proposes to approve this petition for the following reasons:

- Expedite the replacement and/or maintenance of the RGIS in order to maintain protection for the Tittabawassee River;

- Facilitate additional onsite corrective actions consistent with Parts XI and XII of the License where necessary;

- Provide additional environmental protection by allowing greater flexibility in the choice of construction methodologies and materials, resulting in a more durable and effective RGIS;

- Eliminate the need for long term storage of contaminated soils at Dow;

- Eliminate the need to incinerate large quantities of contaminated soil;

- LDR standards were designed for process wastes rather than contaminated soils;

- Disposal of contaminated soil at Salzburg Landfill will be protective of human health and the environment; and

- The petition meets the requirements of 40 CFR 268.44(h)-(j).

PUBLIC PARTICIPATION JACK TO ADDRESS THIS SECTION

The purpose of public participation is to insure that the interested public has knowledge of the MDEQ's proposed actions and an opportunity to comment on those actions. In addition, it ensures that the MDEQ has an opportunity to benefit from any information the public might have relevant to the proposed action.

The public comment and public hearing procedures which will be followed are found in the Code of Federal Regulations at 40 CFR 300.820.

The public comment period opensXXXXXXXXXXXXX. A public hearing on the draft decision on the petition is scheduled for, at the Grace A. Dow Library Auditorium located at located at 1710 West St. Andrews Street in Midland, Michigan. The hearing will begin at 7:00 p.m. and will continue until all persons have had the opportunity to present their comments for the record. Speakers should register by 7:15 p.m., limit their oral presentations to 5 minutes, and if possible, submit two copies of their presentations to the MDEQ in written form at the hearing.

After the public hearing and the close of the public comment period, the MDEQ will decide whether to approve the petition. Written comments submitted during the public comment period and statements provided at the public hearing will be considered by the Regional Administrator in the formulation of his final decision. Responses to written comments and statements will be included in the record supporting the final decision of the Agency. The final petition decision by the MDEQ will be communicated to the applicant, each person who submitted a written comment during the public comment period, persons providing statements at the public hearing, and any person who submits a written request asking to be notified.

Locations of Available Information

The administrative record for the petition is on file in the MDEQ – WHMD's Lansing headquarters, XXXXXXXX,

and may be inspected and copied at any time between 8:30 a.m. and 4:00 p.m., Monday through Friday, except for legal holidays. In addition, copies of the draft State site-specific treatability variance approval and Fact Sheet for the proposed approval are available for review at:

Grace A. Dow Memorial Library
1710 West St. Andrews Street
Midland, Michigan 48640
Contact Person: Kay Bouwens (517) 835-7151

Michigan Department of Environmental Quality
Waste and Hazardous Materials Division
608 W. Allegan
First Floor, John A. Hannah Building
Lansing, Michigan 48909
Contact Person: Cheryl Howe (517) 373-9881

Michigan Department of Environmental Quality
Waste and Hazardous Materials Division
Saginaw Bay District Office
503 North Euclid
Bay City, Michigan 48706
Contact Person: Trisha Peters (989) 686-8025 ext. 8204

Written comments on the draft decision must be received by the addressee below, no later thanXXXXXXXX. All comments should include the name and address of the writer, a concise statement of the exact basis for any comment, and the supporting relevant facts upon which the comment is based. In addition, all further requests for information, including requests for copies of the draft decision and Fact Sheet should be sent to:

Cheryl Howe
MDEQ – WHMD
XXXXXXXXXX
XXXXXXXXXX

For further information, contact Gregory A. Rudloff at (312) 886-0455 or rudloff.gregory@epamail.epa.gov.

PETITION FOR SITE-SPECIFIC TREATABILITY VARIANCE
FROM LAND DISPOSAL RESTRICTIONS
TREATMENT STANDARDS FOR HAZARDOUS WASTES
40 CFR § 268.44(h)
NOTIFICATION OF APPROVAL

Requesting Facility:	The Dow Chemical Company Michigan Operations
Facility Address:	The Dow Chemical Company 1790 Building, Washington Street Midland, Michigan 48667
EPA ID Number:	MID 000 724 724
Facility Representative: **Title:**	Brad Fedorchak EH&S Responsible Care Leader
Facility Contact: Title: **Phone:**	Steven Lucas Remediation Leader (989) 638-6012
MDEQ-WHMD Contact: **Phone:** **Internet:**	**Cheryl Howe** 517-373-9881 howec@michigan.gov
Date of Petition:	November 13, 2006
Date of Submittal of First Revision:	October 1, 2007
Subject of Petition:	Contaminated soils generated as a result of upgrade or maintenance of Corrective Action Management Systems including the Revetment Groundwater Interceptor System (RGIS); contaminated soils generated from implementation of Operating License Part XI required corrective actions at and adjacent to Michigan Operations.
Basis of Petition:	See attached Fact Sheet.
Public Comment Period:	

Treatment Standards From Which Variance is Sought:

TABLE 1			
Waste Code	**Nature/Physical Form/Subcategory of Waste**	**LDR Treatment Standard**	**Effective Date**
F039	Leachate resulting from the disposal of more than one restricted waste classified as hazardous	40 CFR § 268.40 and 268.48: tetrachlorodibenzo-p-dioxins concentration cannot exceed .001 mg/kg	8/8/90
		tetrachlorodibenzo-furans concentration cannot exceed .001 mg/kg	8/8/90
		pentachlorodibenzo-p-dioxins concentration cannot exceed .001 mg/kg	2/19/97
		pentachlorodibenzo-furans concentration cannot exceed .001 mg/kg	2/19/97
		hexachlorodibenzo-p-dioxins concentration cannot exceed .001 mg/k	2/19/97
		hexachlorodibenzo-furans concentration cannot exceed .001 mg/kg	2/19/97
		1,2,3,4,6,7,8 heptachlorodibenzo-p-dioxins concentration cannot exceed .0025 mg/kg	2/19/97
		1,2,3,4,6,7,8 heptachlorodibenzo-furans concentration cannot exceed .0025 mg/kg	2/19/97
		1,2,3,4,7,8,9 heptachlorodibenzo-furans cannot exceed .0025 mg/kg	2/19/97
		1,2,3,4,6,7,8,9 octachlorodibenzo-p-dioxins concentration cannot exceed .005 mg/kg	2/19/97
		1,2,3,4,6,7,8,9 octachlorodibenzo-furans	

TABLE 1			
		concentration cannot exceed .005 mg/kg *SEE 40 CFR 268.40 and 40 CFR 268.49 FOR REMAINING F039 CONSTITUENTS AND CORRESPONDING LDR TREATMENT STANDARDS	10/20/99 (PHASE IV)

Alternative to Treatment Standards Proposed in Petition:

TABLE 2			
Waste Code	**Nature/Physical Form/Subcategory of Waste**	**Proposed Alternative to LDR Treatment Standard**	**Effective Date**
F039	Soil contaminated with leachate resulting from the disposal of more than one restricted waste classified as hazardous	Landfilling in licensed hazardous waste landfill	[Date on which Notification of Approval is Signed by Regional Administrator]

Description of Waste for which Alternative to Treatment Standard was Proposed:

The Site-Specific Treatability Variance is being sought for contaminated soils that will be generated as a result of upgrade or maintenance of corrective action management systems including the Revetment Groundwater Interceptor System (RGIS) at Dow as well as soils generated from the implementation of the corrective actions enumerated in Parts XI and XII of Dow's Operating License (License). Several groundwater collection systems have been installed to prevent contaminated groundwater from entering the Tittabawassee River. The total volume of excavated soils during the next 10 years is unlikely to exceed 100,000 cubic yards. The soils in the vicinity of the groundwater collection systems have

become contaminated over time by historical land disposal activities and due to the movement of contaminated groundwater (F039 multi-source leachate) through the soil on its way to the interceptor trench. The contaminants within these soils also include dioxins and furans. The primary source of the dioxin and furan contaminants in Dow's Midland Plant soils is thought to be from past waste disposal practices associated with 2,4,5-trichlorophenol (2,4,5-T) and pentachlorophenol herbicide and other related manufacturing/formulation plants that operated between the 1930s and 1970s. The dioxins and furans were inadvertent byproducts or impurities formed during the manufacture of the chlorinated phenolic products.

Description of Petitioner's Interest in the Proposed Action:

Soil sampling that has been performed to date indicates that some of the soils that will be excavated during upgrade or maintenance of the groundwater collection systems and during implementation of necessary corrective actions contain F039 constituent concentrations, including dioxins and furans, above their respective treatment standards. Under the Land Disposal Restriction (LDR) regulations, these soils would likely require treatment prior to land disposal, and treatment would likely be accomplished by incineration. This would require the continued maintenance of a long-term storage facility for the soils prior to treatment, and would significantly slow the process of upgrading and maintaining the system. In addition, the cost of incinerating hundreds of thousands of cubic yards of contaminated soil is prohibitive.

Thus, Dow is seeking this variance to enable the continued upgrade and maintenance of the corrective action management systems; implement the necessary corrective actions pursuant to Dow's Operating License; avoid the permitting, construction, and operation of a storage facility for contaminated soils; facilitate the proper closure of the previously-used storage facility for contaminated soils (Waste Storage Area IIA); dispose of the contaminated soils in a manner protective of public health and the environment; and avoid the prohibitive costs and technical difficulties associated with the incineration of hundreds of thousands of cubic yards of soil.

Description of Alternative to Treatment Standard Proposed by the Petition:

The alternative proposed in the petition for contaminated soils whose F039 constituent concentrations, including dioxins and

furans, are greater than the standards contained in 40 CFR 268.40, but less than specified in Table 3 is direct landfilling in Dow's Salzburg Landfill. Salzburg Landfill is a hazardous waste landfill located near the Dow Midland Plant and licensed by the U.S. EPA and MDEQ under RCRA and Part 111 (Hazardous Waste Management) of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Soils that contain F039 constituents and/or dioxins or furans at levels greater than those specified in Table 3 will be treated prior to disposal in the landfill.

Table 3

Regulated Constituent	**Alternative Standard**
tetrachlorodibenzo-p-dioxins	0.050 mg/kg or 50 ppb total I-TEQ
tetrachlorodibenzo-furans	0.050 mg/kg or 50 ppb total I-TEQ
pentachlorodibenzo-p-dioxins	0.050 mg/kg or 50 ppb total I-TEQ
pentachlorodibenzo-furans	0.050 mg/kg or 50 ppb total I-TEQ
hexachlorodibenzo-p-dioxins	0.050 mg/kg or 50 ppb total I-TEQ
hexachlorodibenzo-furans	0.050 mg/kg or 50 ppb total I-TEQ
1,2,3,4,6,7,8 heptachlorodibenzo-p-dioxins	0.125 mg/kg or 50 ppb total I-TEQ
1,2,3,4,6,7,8 heptachlorodibenzo-furans	0.125 mg/kg or 50 ppb total I-TEQ
1,2,3,4,7,8,9 heptachlorodibenzo-furans	0.125 mg/kg or 50 ppb total I-TEQ
1,2,3,4,6,7,8,9 octachlorodibenzo-p-dioxins	0.250 mg/kg or 50 ppb total I-TEQ
1,2,3,4,6,7,8,9 octachlorodibenzo-furans	0.250 mg/kg or 50 ppb total I-TEQ
F039 Constituents listed in 40 CFR 268.40	5 times individual constituent Phase IV LDR standard

Additional Conditions:

- Soil and groundwater sampling data used to demonstrate soil subject to this Treatability Variance must be submitted to the MDEQ consistent with the requirements of the Hazardous Waste Facility Operating License Condition II.L.4;

- Records of the disposition and volume of soils subject to this Treatability Variance must be maintained at the Facility consistent with the requirements of the Hazardous Waste

Facility Operating License Condition II.U;

- Workplans for each modification to corrective action system must be submitted to the MDEQ prior to implementation consistent with the requirements of the Hazardous Waste Facility Operating License;

- All non-F039 soils, including any excavated RGIS cap, roadway, and riverbank shelf materials, which are generated during maintenance or repair activities shall be managed as required by State and Federal Law; and

- If MDEQ determines, at any time, that a new Best Available Technology ("BAT") is developed as an alternative to both thermal destruction and landfilling for contaminated soils similar in both quantity and contamination to those generated as a result of this Treatability Variance, which shows a significant decrease in risk as compared to the actual risk associated with the disposal of the soils in the Salzburg Landfill, MDEQ may, by final agency action, require Dow to employ that BAT to treat contaminated soils generated after the final agency action in accordance with the then-existing RCRA regulations and any applicable laws.

Authorities and References:

Under the LDR regulations, certain hazardous wastes are restricted from land disposal unless they meet a specified treatment standard designed to significantly reduce the toxicity of the hazardous waste. Pursuant to Title 40 of the Code of Federal Regulations, Part 268 (40 CFR 268), hazardous wastes that do not comply with the levels or methods of treatment which substantially diminish the toxicity of a waste or substantially reduce the likelihood that hazardous constituents will migrate from a waste are prohibited from being placed in land disposal units.

A generator of a waste may apply to the U.S. EPA Administrator for a variance from a treatment standard under the LDR regulations pursuant to 40 CFR 268.44(h)-(j). The EPA published its Notice of Final Authorization for this provision (Amendment 7) on July 31, 2002 in 67 FR 49617, granting the MDEQ-WHMD authority to administer Part 268.44 as part of its hazardous waste management program. Section 268.44(h) states: "Where the treatment standard is expressed as a concentration in a waste or waste extract and a waste generated under conditions specific to only one site cannot be treated to the specified level, or where the treatment technology is not appropriate to the waste, the generator or

treatment facility may apply to the Administrator, or his delegated representative, for a site-specific variance from a treatment standard. The applicant for a site-specific variance must demonstrate that because the physical or chemical properties of the waste differ significantly from the waste analyzed in developing the treatment standard, the waste cannot be treated to specified levels or by the specified methods."

The review of Dow's petition for a treatability variance by the MDEQ-WHMD is in accordance with the previously referenced authority delegated to it for site-specific treatability variances from LDR treatment standards for hazardous soil and debris submitted pursuant to 40 CFR 268.44(h).

This variance will apply to soils with dioxin, furan and/or F039 constituent concentrations greater than their respective UTS contained in 40 CFR 268.40, but less than specified in Table 3. The standards contained in 40 CFR 268.40 mean that the waste must be treated to reduce concentrations of F039 constituents, including dioxins and furans, to below those levels prior to land disposal at a licensed hazardous waste facility. This treatment would normally be accomplished by incineration.

Justification:

The MDEQ-WHMD, proposes to approve this petition for the following reasons:

- Expedite the maintenance and upgrade of corrective action management systems in order to maintain protection for the Tittabawassee River;

- Provide additional environmental protection by allowing greater flexibility in the choice of construction methodologies and materials, resulting in more durable and effective corrective action;

- Eliminate the need for long term storage of contaminated soils at Dow;

- Eliminate the need to incinerate large quantities of contaminated soil;

- LDRs were designed for process wastes rather than contaminated soils;

- Disposal of contaminated soil at Salzburg Landfill will be

protective of human health and the environment; and

- The petition meets the requirements of 40 CFR 268.44(h)-(j).

Effective Date of Petition Approval:

The approval will be effective on the date, indicated below, on which this Notification of Approval was signed by the Chief of Waste and Hazardous Materials Division.

Expiration Date:

Approval of the petition will expire 10 years from the date, indicated below, on which this Notification of Approval was signed by the Chief of the Waste and Hazardous Materials Division. To the extent that Dow makes a timely and sufficient application for renewal of this petition, this petition and all conditions herein will remain in effect beyond the petition expiration date and shall not expire until a decision on the application is finally made by the MDEQ.

Dated:

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George Bruchmann
Division Chief
Michigan Department of Environmental Quality
Waste and Hazardous Materials Division